CLAIMS

We claim:

1. A corona discharge device adapted to be used in conjunction with a printing press, the device comprising:

a cabinet housing an on-board power supply associated with a high voltage transformer;

a rear end plate depending from the cabinet;

a front end plate spaced apart in parallel relationship from the rear end plate and depending from the cabinet;

an electrode support tube fixedly mounted to the cabinet and having an electrode magazine slidably mounted on the support tube between an operative position and an inoperative position, the magazine including a series of parallel electrodes;

a grounded treater roll rotatably mounted on a first shaft between the rear end plate and the front end plate and below the support tube; and

a pair of spaced idler rolls rotatably mounted on respective second and third shafts between the rear end plate and the front end plate below the treater roll such that a flexible web is guided upwardly by the idler rolls and wound about the treater roll beneath the electrodes.

2. The corona discharge device of claim 1, wherein the high voltage transformer includes a high voltage wire terminating in a high voltage connection for establishing a high voltage field between the electrodes and the treater roll.

3. The corona discharge device of claim 2, wherein the high voltage connection includes a pair of non-conductive spacers projecting rearwardly from the rear end plate, a connector plate joining the spacers, a spring loaded screw

engagable with the screw when the magazine is in the operative position.

4. The corona discharge device of claim 1, wherein a linear slide support is mounted between a bottom of the cabinet and a top of the support tube, the front end plate being slidably adjustable along the slide support and the first, second and third shafts to define a universal mounting device adapted to fit various frames of the printing press.

5. The corona discharge device of claim 1, wherein a grooved slide track is secured for slidable movement to opposing sides of the support tube, and a pair of slide rails is mounted on the magazine such that the rails align with the grooved slide tracks to slidably support the magazine on the support tube.

6. The corona discharge device of claim 1, wherein the front of the magazine includes a rotatable handle having a latch engagable with a suitable opening in the bottom of the support tube for holding the magazine in the operative position.

7. The corona discharge device of claim 1, wherein the magazine includes detent structure engagable with the support tube for preventing and permitting slidable removal of the magazine from the support tube.

8. The corona discharge device of claim 5, wherein the slide tracks include slot structure enabling the slide tracks when moved back and forth to simultaneously move up and down so that the magazine will be incrementally raised or lowered to enable adjustment of a gap between the treater roll and the magazine.

rotatable knob having a rod tightly screw threaded into a cover plate on the support

tube, whereby unscrewing of the knob will permit the slide tracks to move back and forth as well as up and down.

10. In a corona discharge device for corona discharge treatment of continuous webs, the device having a front end plate and a rear end plate spaced from the front end plate in parallel relationship therewith, an electrode support tube mounted on the front end plate for supporting an electrode magazine having a series of electrodes associated with a high voltage source, the magazine movable between an operative, web treating position and an inoperative, maintenance position, a treater roll rotatably mounted between the front end plate and the rear end plate below the support tube and a pair of idler rolls rotatably mounted between the front end plate and the rear end plate below the treater roll such that a web to be treated is guided upwardly by the idler rolls and wound about the treater roll beneath the electrodes, the improvement comprising:

a cabinet having an integral power supply joined in a high voltage connection to the electrodes for establishing a high voltage field between the treater roll and the electrodes.

11. The improvement of claim 10, wherein the high voltage connection enables hands-free connection of the electrodes with the power supply when the electrode magazine is in the operative position, and permits disconnection of the electrodes from the power supply when the electrode magazine is in the inoperative position.

12. In a corona discharge device for corona discharge treatment of continuous webs, the device having a front end plate and a rear end plate spaced from the front end plate in parallel relationship therewith, an electrode support tube

between an operative, web treating position and an inoperative, maintenance

position, a treater roll rotatably mounted between the front end plate and the rear end plate below the support tube and a pair of idler rolls rotatably mounted between the front end plate and the rear end plate below the treater roll such that a web to be treated is guided upwardly by the idler rolls and wound about the treater roll beneath the electrodes, the improvement comprising:

slidable structure enabling the electrode magazine to be slidably mounted on the support tube between an operative or web treating position and an inoperative or maintenance position.

13. In a corona discharge device for corona discharge treatment of continuous webs, the device having a front end plate and a rear end plate spaced from the front end plate in parallel relationship therewith, an electrode support tube mounted on the front end plate for supporting an electrode magazine having a series of electrodes associated with a high voltage source, the magazine movable between an operative, web treating position and an inoperative, maintenance position, a treater roll rotatably mounted between the front end plate and the rear end plate below the support tube and a pair of idler rolls rotatably mounted between the front end plate and the rear end plate below the treater roll such that a web to be treated is guided upwardly by the idler rolls and wound about the treater roll beneath the electrodes, the improvement comprising:

an adjustable slide arrangement mounted on the support tube for enabling the front end plate to be slidably movable relative to the support tube so that the front end plate defines a universal mounting plate adapted to be connected to various frames of a printing press.

14. In a corona discharge device for corona discharge treatment of continuous webs, the device having a front end plate and a rear end plate spaced

series of electrodes associated with a high voltage source, the magazine movable

between an operative, web treating position and an inoperative, maintenance position, a treater roll rotatably mounted between the front end plate and the rear end plate below the support tube and a pair of idler rolls rotatably mounted between the front end plate and the rear end plate below the treat roll, such that a web to be treated is guided upwardly by the idler rolls and wound about the treater roll beneath the electrodes, the improvement comprising:

a slide and slot arrangement between the support tube and the electrode magazine providing sliding movement of the electrode magazine relative to the support tube, and simultaneously permitting incremental raising and lowering of the electrode magazine relative to the support tube to enable adjustment of a gap between the treater roll and the magazine.